



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Parasites and Geographical Distribution.—The value of parasites of different animals for the investigation of the geographical distribution of the latter has been pointed out recently by H. von Ihering.¹ The object of modern zoogeographical research is chiefly to trace the origin of the different forms of life, and, with respect to the fauna of a limited section of the earth's surface, it is important to settle the question whether the inhabitants originated there, or whether they immigrated from other parts, and, in the latter case, whence they came.

Von Ihering studies the present South American fauna from this point of view, and points out that, among the fauna of this continent, we can distinguish two chief elements: the one is peculiar to it, that is to say, was present there before the second half of the Tertiary, while the other immigrated from the North, after the Miocene. Then he proceeds to demonstrate that the parasitic worms found in these two groups of animals exhibit peculiar differences, so that it is possible, under certain circumstances, to draw the opposite conclusion that the parasites of a certain species of animal indicate, whether the latter belongs originally to South America, or whether it immigrated in the later Tertiary.

The instances quoted are taken chiefly from among Mammals and Birds, but it is evident that also other groups may furnish examples.

In conclusion, von Ihering condenses his results in three fundamental "biological laws," which we reproduce here, freely translated:

(1) Land animals, even if they migrate over a large extent of territory do not lose the parasitic worms peculiar to them because the lower animals which serve as intermediate hosts offer everywhere analogous conditions, provided everything else remains unchanged. Although, in new areas of distribution, some new parasites may be added, the old conditions largely remain unchanged, which is very evident in South America, where the parasitic worms of the holarctic region are not found with the indigenous (autochthon) mammals or birds, but only with the strangers (heterochthon) that immigrated at a late period.

(2) Under these circumstances, helminthology becomes a valuable aid for the analytic method of zoogeography, and we may confidently obtain by it important results as to the history of such groups in which we do not possess satisfactory geological material, or in which such material naturally cannot be expected.

¹ Ihering, H. von. Die Helminthen als Hilfsmittel der zoogeographischen Forschung, *Zoolog. Anzeig.* Bd. 26, 1902, pp. 42-51.

(3) Helminthology treated in this way, may also aid paleontological research, since the relations between parasites and hosts, and their migrations and geological age, permit conclusions to be drawn as to the age of the single larger groups (of the parasites) and even of their genera and species.

A. E. O.

Two papers on the Nautilus.¹—These two works which appeared nearly simultaneously form the most important contributions to our knowledge of the tetrabranch cephalopods which have appeared for years. Dr. Griffin had for his material numerous specimens collected by the Menage expedition of the Minnesota Academy of Sciences, while Dr. Willey collected his among the islands of the Eastern Archipelago where he went in the hopes of obtaining the embryology of this most interesting animal.

Neither of the papers—which extend over 95 and 91 pages and are illustrated by several text figures and 17 and 9 plates respectively—can be summarized here. The two, to a great extent, supplement each other. Dr. Griffin has endeavored to give a connected account of the anatomy, utilizing not only his own dissections but the accounts of his predecessors and hence gives a wealth of detail. Willey on the other hand describes rather what he himself has investigated and his comparisons are those of the broader morphological treatment. A single example will illustrate the different points of view. In treating of the digital tentacles Willey gives comparatively little about the anatomical structure but tries to work out a numerical nomenclature of these parts, in which he comes to results widely at variance with the previous studies of Vayssière. Griffin, on the other hand describes the anatomy in great detail, but says nothing regarding the arrangement, although he knows of Vayssière's work. He gives however a plan of their position which differs in some respect from that of Willey. Willey further enters with the question whether these tentacles are to be compared to the arms of the dibranch cephalopods or to the acetabula as has been suggested, inclining to the former view.

The sections relating to the foot in Dr. Willey's paper are of interest. Accepting Grenacher division of the molluscan foot into a median propodium and lateral epipodia and discussing change of function and its relations to change of organs and to topography he argues for the conclusion that the siphon represents the propodium

¹Griffin, L. E. The Anatomy of *Nautilus pompilius*, *Memoirs National Acad. Science*, viii, 1900 (1902).—Willey's Contribution to the Natural History of the Pearly Nautilus, in his *Zoölogical Researches*, part vi, August, 1902.